

21. The computer-implemented method of claim **13**, further comprising:

defining a materialized view, wherein:

random access to the data is enabled using the materialized view;

the materialized view is retrievable and comprises a snapshot of the data at one of the commit nodes; and

the materialized view comprises an accumulation of the changes;

22. The computer-implemented method of claim **21**, wherein:

the materialized view is stored at a branch tip of the commit graph;

to traverse the commit graph to a specific commit node, changes in the change sets are applied to the materialized view based on the commit nodes traversed on the path from the branch tip to the specific commit node.

23. The computer-implemented method of claim **13**, further comprising:

storing the commit graph in a key-value store, wherein:

the key-value store is scalable and optimized for write performance based on access patterns of the key-value store.

24. The computer-implemented method of claim **13**, further comprising:

defining a software development kit (SDK) on a client and server in a cloud distributed network that enables the managing of the data to be performed in a distributed manner.

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